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10/553,047	06/06/2006	Yutaka Imasato	21.1129	1603

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EXAMINER	
BUI, HANH THI MINH	
ART UNIT	**PAPER NUMBER**
2192	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/553,047	IMASATO ET AL.	
	Examiner	Art Unit	
	HANH T. BUI	2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Applicant's amendment dated October 8th, 2010 responding to the July 1st, 2010 Office Action provided in the rejection of claims 1-6.

2. Claims 1, 4, and 6 have been amended.

3. Claims 2-3 have been canceled.

4. Claim 7 has been added.

5. Claims 1 and 4-7 are pending in the application, of which claims 1 and 7 are in independent form and which have been fully considered by the examiner.

Response to Amendment

6. The objection of claims 2 and 6 has been withdrawn in view of Applicant's amendments of the claims.

Response to Arguments

7. Applicants' arguments filed on October 8th, 2010 based on amended claims, have been considered but are not persuasive. Therefore, the rejection of claim 1-6 under section 103(a), which was mailed on July 1st, 2010 is maintained.

REMARKS

8. Answers To Applicant's Arguments:

a. **Argument:** Eller cannot modify or change the modules of an existing application software (See Remarks page 6: 7-8).

Answer: examiner respectfully disagrees because Eller discloses in FIG. 1 and associated text, such as, "When new process objects are required, the generator 20 will provide *a tool* to define the *new objects* quickly and accurately for *subsequent re-use*" (emphasis added – See pg. 10: 9-11). Eller further discloses "A *SCD* may define an object in the real world … and it can also *define a software object*" (emphasis added – See pg. 11: 9-11).

In addition, Eller discloses "*SCDs are created as instances of reusable objects*, called SCD Types … The SCD will inherit all of the attributes of its type. In addition, it is possible to *adjust the SCD* to the specific task it performs by *setting* instance parameters and attributes … Devices types can be *reused* and the specific behavior for the device 36 can be parameterized …" (emphasis added – See pg. 11: 21-36).

Moreover, Eller discloses "The first task to be performed by a user is to configure the generator 20 to suite the standards for the project ... This task will be carried out by a system administrator or administrators. After the generator 20 is *set up to meet the user's individual requirements*, it will be changed infrequently to *add, edit, or delete device types*" (emphasis added – See pg. 13: 17-23).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1 and 4-7 are objected under 35 U.S.C. 103(a) as being unpatentable over Thomas Eller et al. (WO 02/31607 A2 – hereinafter, Eller) in view of Vinegar et al. (Pub. No. 2003/0164240 - hereinafter, Vinegar).

Regarding claim 1:

Eller discloses *an acquisition and control system for use with devices installed in an [[underground well]], comprising:*

- *an installation designer;*

(FIG. 1 and associated text, such as, "When new process objects are required, the generator 20 will provide *a tool* to define the new objects quickly and accurately for subsequent re-use" (emphasis added – See pg. 10: 9-11)).

- *a data server including a database of device-specific and installation-specific data;*

(FIGS. 1, 12 and associated text, such as, “an application constructed from a process object or *smart control device (SCD) specification* and *maintenance database* ... The SCD specification provides the definition and maintenance of control objects to be used in the automation system ... The application generator builds the application from a user's process design utilizing the control objects ...” (emphasis added – See pg. 3: 3-11).

"… *A SCD may define an object* in the real world, e.g., motor, valve, temperature transmitter, etc., and it can also *define a software object* which is used for regulation control or other control functions … An SCD library 26 contains the SCDs 22 …" (emphasis added – See pg. 11: 6-17)).

- *an application builder; and*

(FIG. 1 – application generator 20).

- *a control and acquisition system; wherein*

(FIG. 3 – control system 24).

- *the installation designer comprises a system for defining a hardware and software functional configuration for the devices installed in [[the well]], the functional configuration being provided to the data server and wherein the installation designer defines the hardware and software configuration in the form of software modules based on data obtained from the database and adds, modifies or deletes the modules;*

(FIG. 1 and associated text, such as, "When new process objects are required, the generator 20 will provide *a tool* to define the new objects quickly and accurately for *subsequent re-use*" (emphasis added – See pg. 10: 9-11).

"… the device comprises a supervisory aspect and a control aspect of the device. A *physical model* of the control process is defined ... a *topological model* of the control process is also defined … The physical and topological models are analyzed … input into a generator …" (emphasis added – See pg. 2: 23-31).

"… the device comprises a supervisory aspect and a control aspect of the device. A *physical model* of the control process is defined ... a *topological model* of the control

process is also defined … The physical and topological models are analyzed … input into a generator …" (emphasis added – See pg. 2: 23-31).

Furthermore, Eller discloses "A *SCD* may define an object in the real world … and it can also *define a software object*" (emphasis added – See pg. 11: 9-11).

In addition, Eller discloses "*SCDs are created as instances of reusable objects*, called SCD Types … The SCD will inherit all of the attributes of its type. In addition, it is possible to *adjust the SCD* to the specific task it performs by *setting* instance parameters and attributes … Devices types can be *reused* and the specific behavior for the device 36 can be parameterized …" (emphasis added – See pg. 11: 21-36).

Moreover, Eller discloses "The first task to be performed by a user is to configure the generator 20 to suite the standards for the project ... This task will be carried out by a system administrator or administrators. After the generator 20 is *set up to meet the user's individual requirements*, it will be changed infrequently to *add, edit, or delete device types*" (emphasis added – See pg. 13: 17-23)).

- *the application builder comprises a system for obtaining software components from the data server and configuring such components to correspond to the functional configuration defined by the installation designer, the application builder outputting the configured software components to the control and acquisition system; and*

(FIGS. 1, 12 and associated text, such as, "The physical and topological models are analyzed … input into a generator and an application for the control system is generated …" (emphasis added – See pg. 2:28-32).

"The models are input into the generator wherein the *application is to be generated* and executed on the control system … an application constructed from a process object or *smart control device (SCD) specification* and *maintenance database* ... The SCD specification provides the definition and maintenance of control objects to be used in the automation system ... The *application generator builds the application* from a user's process design utilizing the control objects ..." (emphasis added – See pg. 3: 3-11)

"SCDs 22 are used by the application generator 20 to design and automatically *generate an application for a control system 24* …" (emphasis added – See pg. 11: 18-20).

"The generator 20 will allow the designer to *copy equipment and to re-use* any number of copies in order to define the control process" (emphasis added – See pg. 14: 18-19)).

- *the control and acquisition system installs the configured software components in a data communication and processing environment connected to the devices installed in [[the well]] so as to control operation of the devices and to acquire data from the devices in accordance with the functional configuration.*

("The models are input into the generator wherein the *application is to be generated* and *executed on the control system*" (emphasis added – See pg. 3: 1-2).

"After the SCDs have been defined in the application generator, *an application is generated for the control system*, i.e., controller logic, HMI, communication throughout the system" (emphasis added – See pg. 3: 12-14).

"SCDs 22 are used by the application generator 20 to design and automatically *generate an application for a control system 24* …" (emphasis added – See pg. 11: 18-20).

"The application is now prepared for the HMI system ... Switching to *Run* mode … The debug window of the OFS and the graphical display of the SCD created by the generator 20 will appear." (See pg. 19: 26-33)).

But, Eller does not explicitly teach:

- *the well*

However, Vinegar discloses "A gas-lift well having a controllable gas-lift valve" (See Abstract). Vinegar further discloses "*The controllable gas-lift valve is powered and controlled from the surface* to regulate the fluid communication between the annulus and the interior of the tubing. Communication signals and power are sent from the surface using the tubing and casing as conductors … the controllable gas-lift well includes one or more sensors downhole which are preferably in contact with the downhole modem and communicate with the surface computer, … The sensors supply measurements to the modem for transmission to the surface or directly to a *programmable interface controller operating the controllable gas-lift valve for controlling the fluid flow through the gas-lift valve*" (emphasis added – See par. [0014-0016]).

"electronics module can *receive instructions from the surface* and adjust the operational characteristics of the valve 220" (emphasis added – See par. [0059]).

"A plurality of sensors are used in conjunction with electronics module 106 to *control the operation* of controllable valve and gas-lift well 210" (emphasis added – See par. [0062])

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Vinegar into the teachings of Eller because such combination would have provided the ability to attain and maintain the desired flow regime. In general, well tests and diagnostics can be performed and analyzed continuously and in near real time as suggested by Vinegar (See par. [0020]).

Regarding claim 4:

Eller and Vinegar discloses *the system as claimed in claim 2, wherein the application builder selects software resources from the database to fulfill the functional requirements of each module.*

(Eller further discloses in FIG. 1 and associated text, such as, "When new process objects are required, the generator 20 will provide *a tool* to define the new objects quickly and accurately for *subsequent re-use*" (emphasis added – See pg. 10: 9-11).

"… the device comprises a supervisory aspect and a control aspect of the device. A *physical model* of the control process is defined ... a *topological model* of the control process is also defined … The physical and topological models are analyzed … input into a generator …" (emphasis added – See pg. 2: 23-31)).

"The models are input into the generator wherein the *application is to be generated* and executed on the control system … an application constructed from a process object or *smart control device (SCD) specification* and *maintenance database* ... The SCD specification provides the definition and maintenance of control objects to be used in the automation system ... The *application generator builds the application* from a user's process design utilizing the control objects ..." (emphasis added – See pg. 3: 3-11)

"SCDs 22 are used by the application generator 20 to design and automatically *generate an application for a control system 24* …" (emphasis added – See pg. 11: 18-20)).

Regarding claim 5:

Eller and Vinegar discloses *the system as claimed in claim 1, wherein the installation designer and application builder operate at a location remote from the well site.*

(Eller further discloses in FIG. 2).

Regarding claim 6:

Eller and Vinegar discloses *the system as claimed in claim 5, wherein the output from the application designer is provided for installation at the well site.*

(Eller further discloses "The models are input into the generator wherein the *application is to be generated* and *executed on the control system*" (emphasis added – See pg. 3: 1-2).

"After the SCDs have been defined in the application generator, *an application is generated for the control system*, i.e., controller logic, HMI, communication throughout the system" (emphasis added – See pg. 3: 12-14).

"SCDs 22 are used by the application generator 20 to design and automatically *generate an application for a control system 24* …" (emphasis added – See pg. 11: 18-20).

"The application is now prepared for the HMI system ... Switching to *Run* mode … The debug window of the OFS and the graphical display of the SCD created by the generator 20 will appear." (See pg. 19: 26-33)).

Regarding claim 7:

Eller discloses *a method of utilizing an acquisition and control system for use with devices installed in an underground well, comprising:*

- *providing an acquisition and control system* (FIG. 3 – control system 24) *for* [[*a well*]], *wherein the system includes an installation designer; a data server including a database of device-specific and installation-specific data; and an application builder* (FIG. 1 – application generator 20).*; wherein the installation designer comprises a system for defining a hardware and software functional configuration for the devices installed in* [[*the well*]], *the functional configuration being provided to the data server,*

wherein installation designer defines the hardware and software configuration in the form of software modules;

(FIG. 1 and associated text, such as, "When new process objects are required, the generator 20 will provide *a tool* to define the new objects quickly and accurately for subsequent re-use" (emphasis added – See pg. 10: 9-11).

FIGS. 1, 12 and associated text, such as, "an application constructed from a process object or *smart control device (SCD) specification* and *maintenance database* ... The SCD specification provides the definition and maintenance of control objects to be used in the automation system ... The application generator builds the application from a user's process design utilizing the control objects ..." (emphasis added – See pg. 3: 3-11).

"… *A SCD may define an object* in the real world, e.g., motor, valve, temperature transmitter, etc., and it can also *define a software object* which is used for regulation control or other control functions … An SCD library 26 contains the SCDs 22 …" (emphasis added – See pg. 11: 6-17).

"… the device comprises a supervisory aspect and a control aspect of the device. A *physical model* of the control process is defined ... a *topological model* of the control process is also defined … The physical and topological models are analyzed … input into a generator …" (emphasis added – See pg. 2: 23-31).

Furthermore, Eller discloses "A *SCD* may define an object in the real world … and it can also *define a software object*" (emphasis added – See pg. 11: 9-11)).

- *the application builder comprises a system for obtaining software components from the data server and configuring such components to correspond to the functional configuration defined by the installation designer, the application builder outputting the configured software components to the control and acquisition system; and*

(FIGS. 1, 12 and associated text, such as, "The physical and topological models are analyzed … input into a generator and an application for the control system is generated …" (emphasis added – See pg. 2:28-32).

"The models are input into the generator wherein the *application is to be generated* and executed on the control system … an application constructed from a process object or *smart control device (SCD) specification* and *maintenance database* ... The SCD specification provides the definition and maintenance of control objects to be used in the automation system ... The *application generator builds the application* from a user's process design utilizing the control objects ..." (emphasis added – See pg. 3: 3-11)

"SCDs 22 are used by the application generator 20 to design and automatically *generate an application for a control system 24* …" (emphasis added – See pg. 11: 18-20).

"The generator 20 will allow the designer to *copy equipment and to re-use* any number of copies in order to define the control process" (emphasis added – See pg. 14: 18-19)).

- *the control and acquisition system installs the configured software components in a data communication and processing environment connected to the devices installed in* [[*the well*]] *so as to control operation of the devices and to acquire data from the devices in accordance with the functional configuration;*

("The models are input into the generator wherein the *application is to be generated* and *executed on the control system*" (emphasis added – See pg. 3: 1-2).

"After the SCDs have been defined in the application generator, *an application is generated for the control system*, i.e., controller logic, HMI, communication throughout the system" (emphasis added – See pg. 3: 12-14).

"SCDs 22 are used by the application generator 20 to design and automatically *generate an application for a control system 24* ..." (emphasis added – See pg. 11: 18-20).

"The application is now prepared for the HMI system ... Switching to *Run* mode ... The debug window of the OFS and the graphical display of the SCD created by the generator 20 will appear." (See pg. 19: 26-33)).

- *utilizing the acquisition and control system with* [[*a well*]] *having a first configuration;*

- *changing the acquisition and control system having the first configuration by one of adding, modifying and deleting at least one module; and*

- *utilizing the changed acquisition and control system with* [[*a well*]] *having a second configuration.*

("*SCDs are created as instances of reusable objects*, called SCD Types … The SCD will inherit all of the attributes of its type. In addition, it is possible to *adjust the SCD* to the specific task it performs by *setting* instance parameters and attributes … Devices types can be *reused* and the specific behavior for the device 36 can be parameterized …" (emphasis added – See pg. 11: 21-36).

"The first task to be performed by a user is to configure the generator 20 to suite the standards for the project ... This task will be carried out by a system administrator or administrators. After the generator 20 is *set up to meet the user's individual requirements*, it will be changed infrequently to *add, edit, or delete device types*" (emphasis added – See pg. 13: 17-23).

"The generator 20 will allow the designer to *copy equipment and to re-use* any number of copies in order to define the control process" (emphasis added – See pg. 14: 18-19)).

But, Eller does not explicitly teach:

- *the well*

However, Vinegar discloses "A gas-lift well having a controllable gas-lift valve" (See Abstract). Vinegar further discloses "*The controllable gas-lift valve is powered and controlled from the surface* to regulate the fluid communication between the annulus and the interior of the tubing. Communication signals and power are sent from the surface using the tubing and casing as conductors … the controllable gas-lift well includes one or more sensors downhole which are preferably in contact with the downhole modem and communicate with the surface computer, … The sensors supply

measurements to the modem for transmission to the surface or directly to a *programmable interface controller operating the controllable gas-lift valve for controlling the fluid flow through the gas-lift valve*" (emphasis added – See par. [0014-0016]).

"electronics module can *receive instructions from the surface* and adjust the operational characteristics of the valve 220" (emphasis added – See par. [0059]).

"A plurality of sensors are used in conjunction with electronics module 106 to *control the operation* of controllable valve and gas-lift well 210" (emphasis added – See par. [0062])

It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Vinegar into the teachings of Eller because such combination would have provided the ability to attain and maintain the desired flow regime. In general, well tests and diagnostics can be performed and analyzed continuously and in near real time as suggested by Vinegar (See par. [0020]).

Conclusion

11. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

12. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh T. Bui whose telephone number is (571) 270-1976. The examiner can normally be reached on 9:30 AM - 4:00PM / Monday-Friday.

14. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hanh T Bui/
Examiner, Art Unit 2192
November 16th, 2010

/Tuan Q. Dam/
Supervisory Patent Examiner, Art Unit 2192